[p. i]

SUMMARY

On the assumption that a woman's physical and mental condition at childbirth is a product of her life-long daily habits and ideas as well as any particular injunctions set up to insure well-being in pregnancy and parturition, the cultural scene was searched to ascertain all possible relevancies.

The farmers of Bang Chan lived in a tropical, rice-growing terrain, annually flooded by the monsoon run-off. Food was plentiful even if cash was not. Except for better housing and equipment, and a greater enjoyment of market novelties, the rich lived much like the poor. The work in the fields by women paralleled that by men. Sharp physical demands, especially at planting and harvest, made them muscular.

At marriage the partners were fully mature and no woman was married against her wishes. The birth of a child was welcomed as leading to higher personal, social, and economic status.

The underlying concepts which explain why the food and other injunctions, both pre-natal and post-partum, and the ritual behavior took their particular forms, are explained.

The human body, harboring multiple immaterial souls, was seen as composed of earth, fire, water, and wind. Illness was caused by intrusive disruption of these four elements, or by soul loss. Food and medicines had properties which could be used to restore balance in the elements. The traditional curers or exorcisers had magical and herbal remedies obtained ritually from a teacher. Since Buddhist phrasings, often read from old texts in weekly sermons, molded Bang Chan's conception of life, the ultimate cause of health or illness was the presence or absence of merit. This determined one's kan (karma), the balance sheet of virtuous actions which one added to, or reduced by sinning throughout successive existences over eons of time.

The Buddhist cosmic view of individuals as separate autonomous beings brought it about that help was the only dynamic relationship possible between people. The bonds established by helping people, on this earth, especially in the tasks of feeding priests, lasted on into successive incarnations. Thus, meritorious people met again and might marry again. Families had continuity over time, and babies were born into the "right"

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Chapter I

THE COMMUNITY OF BANG CHAN

The Geographical Setting

In the populous flat central plain of Thailand where Bang Chan was located, fenceless geometric rice-fields, dotted by clumps of trees, stretch as far as the eye can see. Houses, clustering occasionally into hamlets, line the canals that serve for domestic use, drainage, irrigation, and communication. A few mounded-up roads lead out from Bangkok, the national capital on the Menam Chao Phraya, the great central river.

The monsoon divides the year into three seasons: a hot and wet (late May through November); a cool and dry (December to mid-February); and a hot and dry (late February to mid-May). The temperatures range annually from 59° to 89° F. (15° to 32° C.) with monthly means of 77° to 86° F. (25° to 30° C.) (de Young:5). A drop at night averages around 18° F. (10° C.) in April, and 22° F. (12° C.) in January, while the relative humidity varies between 86 per cent and 81 per cent (Hauck, et al.:12). Rainfall averages about 50 inches a year, 40 of which fall in the wet season (Janlekha:21). Because of the run-off from the mountains in the north, once a year the Menam Chao Phraya slowly rises, fills the canals and then overflows its banks, covering the plain for hundreds of miles to a depth of three feet or more. In Bang Chan, the water stood on the land from June until January, with its peak in October. From February to May the canals ran low, and the land dried and cracked from the intense heat.

The Community

In 1954, 1700 persons (336 families) lived in Bang Chan. Muslims, comprising 10 per cent of the population, lived as fully Thai citizens in all parts of the community in economic and social symbiosis with Buddhists. A few ethnic Chinese had married into Thai families and were accepted.

The community spread over an area of about 7000 rai (1000 hectares or 4 square miles). Bang Chan Canal bisected

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132 Bangkok. The tropical monsoon climate divides the year into three seasons, a hot, wet season from late May to November, a cooler, dry season from December to early February, and a hot, 361 dry season from late February to mid-May. The community, scattered over an area of approximately five square miles, was 161 composed of seven neighboring hamlets. In 1954, the population 162 was approximately 1700, divided among 336 households. About 60 per cent of the households were made up of independent families, parents with unmarried children, with an average family [965] size of 5.7 persons. The main occupation of 80 per cent of all families was rice farming.

243 The climate together with the overflowing Chao Phraya [18] river, provided natural conditions for raising a single crop [220] of wet rice. From May or June to February, the principal activities were those connected with rice production. This crop greatly exceeded the needs for local consumption as human food, [435] feed, and seed. The surplus of rice which was sold, was estimated for 1953 as 1.4 times the amount used for all purposes within the village (Janlekha, 1955).

346 Wat Bang Chan, the Buddhist monastery and place for re- 621 ligious exercises, was also the center of social life in the [795] community. When data for this study were being gathered, the one primary school in the village was located on the grounds of the wat. The community was defined simply by the clientele which patronized Wat Bang Chan and this elementary school. [563] Within the area of the community lived a small minority of Thai Moslems who patronized a mosque and school just outside Bang Chan. The few Chinese in the village were considered as part [028] of the Thai-Buddhist community. Information to be presented on food habits refers primarily to habits of the Buddhist majority, although some reference will be made to ways in which Moslem practices differed therefrom.

193 Although for six or more months of the year the fields 243 were covered with water, sometimes to a depth of a meter or 491 more, a year-round road, connecting Bangkok and Minburi, the 484 nearest market town, ran through one edge of the village. Bus 587 service was available along this road, to either Bangkok or [494] Minburi but within the community one went by boat on the network of canals during the wet season, and during the dry season, [503] on foot along the dikes or across fields. From late January through May, when subsidiary canals were apt to be dry, getting about was somewhat difficult. Boat travel was considered easy, but as many families had only one boat, a trip to the store or even to a neighbor's home had to be planned with reference to the activities of other family members.

443 Large scale purchases, as for a ceremony, were always made at a big market, but in general, instead of people going to the market-town, the "market" came to the people. Boat-venders brought not only fresh produce and staples but also sweets, ices, soft drinks, and cooked foods such as Chinese

Seasonal Activities

128 A chart has been prepared to show the climatic conditions in Bang Chan and what people were doing at different seasons (Chart 1). For convenience, the periods covered by the four rounds of the dietary survey (p. 58) are included.

22 132 241 512 570 [illegible] [illegible] 24 The year starts with May, the beginning of the rice-year. At this time the rains began to soften the parched ground, and the heat slackened. School re-opened. Farmers turned to plowing, harrowing, raising the seedlings. Both sexes worked about equally in field labor, boys from 14 and girls from about 15 years of age performing tasks according to skill and strength. Everyone was in the field at dawn. The buffalo, but not the farmer, rested through the noonday heat (about 10 a.m. until 2 p.m.) and also on the weekly holy day. Meals were usually eaten about 10 a.m. and after returning from the field at dark. Although two meals a day were usual at other times, at this season, some had a third meal about 2 p.m. If the buffalo were brought home to rest, this meal could be eaten at home, but hired laborers or those working far from home often took with them rice and other foods in a (2)pin-(1)toc, or tiered lunch kit.

22 132 501 441 524 With the rains, the canals had filled, so that by June buyers with big rice boats could return. The few farmers who could afford to hold onto a portion of their last year's crop sold it for a better price at this time. Vegetables and fruits which had died in the long drought were replaced, and trees were planted.

24 22 132 In July the heavy transplanting season began. Because of cooperative work habits or hiring out, people worked solidly day after day for two months on their own or on another's fields. It was dawn-to-dark, back-breaking work.

This was an anxious time. The seedlings had to go in at exactly the right time. Water level was only partly controllable. Lack of rain might be remedied by pumping water from the canals but flooding would drown the plants. School [illegible] 570 vacation was scheduled at this time so both teachers and [illegible] children could help. Older children might work in the fields, [illegible] while younger ones, from 8 to 13, and the aged took over the care of babies and toddlers, fished, cooked, gathered food for the family and grass for the buffalo. People knew the [illegible] crop was subject to drought and flood, pests of rats and worms, destruction by birds or wandering buffalo or duck, and in the end to the mysterious fluctuations of the price of rice on the world market. Moreover, some persons worried about debts, acquired from giving a ceremony or making a capital investment and sometimes from heavy gambling during the rest season.

Chart 1. SEASONAL CYCLE - BANG CHAN, THAILAND, 1953-54

	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Season	→ ‹----WET----›							‹--COOL--›		‹--HOT--›		
Temperature (°C)[1]	30	29	28	29	29	28	26	25	25	28	30	30
Humidity, rel., %	77	80	81	81	80	78	74	70	70	65	66	67
Rainfall	---→ heavy		moderate	‹--heavy--›		‹-----light-----›			‹-----negligible-----			
Canals	rising			high		(floods)			lowering fast		low,dry	
Cultivation of Rice	plowing----→ seedbed grown				growing	early var. mature						
	TRANSPLANTING					‹--------HARVEST--------›						
School	vacation							vacation			vacation	
Cash available Source	cash in hand---------- rice						‹-----cash shortage----→ cash jobs---------→			main rice sale	cash in hand--	
Fruit;vegetables	--→ ‹-new planting-→								‹------annuals die-----			
Fish: Supplies	ponds drained-→								‹-----ponds drained-------			
Maturation			‹------many varieties----------›							‹---best varieties---›		
Preserving	‹----much----›			‹----------moderate----------›						‹---------most------›		
Ceremonies	ceremonies-------→			‹-----Buddhist Lent-----›							‹--ceremonies---	
Dietary survey	--→ ‹-----Round I------›					‹--------Round II--------›			‹----Round III----›		‹--Round IV-	

1. Mean temperatures and relative humidity estimated from charts for Bangkok and the central plain of Thailand (Bunnag and Dhararak, 1947). Mean monthly temperature range from 25-30°C corresponds to 77-86°F; diurnal variations are greater, averaging 18°F (10°C) in April and 22°F (12°C) in January.

2: Hauck et al. D.E-5 (1952-1954) 1958 AO7 Central Thai AO7 Bang Chan

There was an important psychological difference between the two work seasons. At planting time, people were anxious; at harvest they were happy. People saw cash just ahead, for the crop was now safe. Each host of a cooperative work party gave at least one big convivial feast, the best he could provide and even the hired laborers got a round of liquor. People joked more than usual at work. Two boat loads of workers were observed racing down a canal at 6 a.m., shouting and cheering, although they had probably worked long hours for days or weeks before. Everyone knew that a joyous season was at hand.

When the crop was in, the people rested, fished, and began to prepare for big ceremonies demanding organized work. Supplies of fish were needed for preserving or for feasts. Labor and engines were now available, and with water low, fishponds could be conveniently drained, and the fish on the muddy bottom caught. A pond might be drained two or three times a year, but timing was determined by the availability of equipment and workers and by the needs of the annual ceremonial cycle. One pot of fish was given to each helper at a cooperative pond-draining.

Most farmers sold their rice in February. Capital was invested in farm equipment, buffalo, housing and ceremonies. Debts were cleared if possible. Cash expenditures for food, which had declined progressively since the beginning of the rice year, reached the yearly minimum, mostly because people had ample time to fish. People also saved up their money if they were sponsoring a ceremony, ate lightly at home if they were going to one. Since school closed from March 15 to May 1, because of the heat, money was not given to children for snacks.

The land dried up and cracked, rainwater for drinking gave out, and some canals were reduced to mud. Cherished plants were kept alive by watering, but no new planting could be done. Buffalo, which at other seasons were confined and fed, now roamed the fields, nibbling stubble. Everyone was busy and happy. Ordinations, weddings, cremations, merit-making feasts and several big holidays came one after another. Of the four New Year's Days observed in Bang Chan, the Buddhist New Year, which because of the lunar calendar fell about mid-April, was the most important, being celebrated over two days with extensive offerings of food to the priests and with other activities. The official New Year's Day, January 1, and the traditional New Year's Day about November 1, had rather slight observances. Chinese New Year's, in February, was celebrated by the Chinese residents who presented a school teacher and their hamlet headmen each with a boiled chicken and a Chinese sweet. Lent officially closed the ceremonial season, but the advent of plowing-time slowed the pace considerably.

When the rains finally came, the rice year started again.

BANG CHAN

FOREWORD

114 The Cornell Thailand Project, like other Cornell University studies in community development, is a long term investigation in the field of the processes involved in changing cultural behavior in a non-industrialized society. Field research was begun in 1948 in the central plain of Thailand with base line studies of the rice farming community of Bang Chan and its environs. A collaborating staff of Thai and Americans representing different disciplines has continued to work in Thailand at Bang Chan and elsewhere in a series of phases extending to the present.

[013] The first interim report issued by the Project gives a general account of the economic, political and social organization of Bang Chan in 1948-49 together with some material on [129] health and diet (Sharp et al., 1953). Since the circulation of this first interim report was limited, some of the salient characteristics of Bang Chan should be outlined here.

361 Bang Chan is located some twenty roadmiles northeast of Bangkok, the rapidly growing major metropolis and capital of Thailand. The village is between two and three miles west of a small district administrative center and market town, [487] Minburi. A century-old canal and to the north of it a post- [491] war hard surface road connect Minburi and Bangkok so that villagers have easy access to these two centers by boat or bus.

621 In 1954, when data for the present study were still being 162 gathered, the population of Bang Chan was about 1700, divided among about 300 households. Roughly 60 per cent of the house- [592] holds were made up of independent nuclear families consisting of parents and unmarried children. The average size for all 243 families was 5.7 persons. Rice farming was the main occupa- 24 tion of 80 per cent of all families. The population in 1954 [463] worked and lived on about 2800 acres (7000 rai) of land. With [311] the exception of some 120 acres (300 rai) used for the home sites and home gardens scattered along the network of canals in the village, all land was devoted to the cultivation of wet rice. Nutritional density is thus practically the same as population density. Of the rice crop, 60 per cent or more may be sold, the remainder providing seed, feed, and the staple [132] food of the people. During the wet season and into the cooler 28 dry season, from May or June to February, the growing of the [517] single crop of rice is the main activity. The hot dry season from March until the rice planting begins again is a period of fiestas, ceremonies, and visiting.

621 The Thai countryside is divided into hamlets, each with [622] a headman in charge of the thirty to sixty households of the [128] hamlet. Seven such hamlets constitute the Bang Chan community. (In the Project studies they are identified by the initials BC and KY followed by a number).

7: Janlekha X-4,5 (1948-1953)1956 AO7 Central Thai AO7
Bangchan

132 The monsoon climate of the region in which the village lies gives the area an annual rainfall, averaged over a recent ten year period, of about fifty inches; the effective rainfall, for the critical months when the rice is in the ground, is about forty inches.[3] The minimum precipitation requirement for wet rice is about seventy inches a year. This rainfall deficiency in the central plain of Thailand is made up by direct flooding from the rivers which flow in from the mountains and plateaux on the northeast, north, and west, the run-off rate fortunately being low because forests still cover much of these uplands. The whole plain is channeled for simple distribution of the spate of these rivers which occurs during October, November, and December, just before the harvest of rice. Because most fields are fed by gravity without an artificial head of water, or with only small heads impounded behind water gates, the depth and duration of flooding cannot be wholly controlled. As a result, variable water supply produces a wide variability in harvests and crop risks may be considerable. For 117 years between 1831 and 1948 the ministry of Agriculture records four major damaging floods (1831, 1879, 1917, and 1942), four years of extreme drought, thirty-five years of severe drought, and twenty-one years of moderate drought, leaving only fifty-three years of optimal supply of water.[4]

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[195 731]

3. Central Service of Statistics, Statistical Yearbook of Thailand, No. 21, 1939-40-1944. Bangkok, 1950.

4. Ministry of Agriculture, Thailand and Her Agricultural Problems (Bangkok, 1950).

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243 The normal distribution of rain in the region, however, is almost ideal for single crop rice production. Heavy rainfall in May and June softens the soil for easy plowing and harrowing. During July and August, when the young plant does not require much water, the rainfall moderates. Again there is heavy rainfall in September and October when the maturing plant needs rising water as it shoots upward. Finally, during the harvesting season of December and January there is a minimum of rainfall. It is in terms of rainfall that the people divide the year into three seasons: (1) the rainy season of late May to November; (2) the cold season, December into early February; and (3) the dry hot season from late February to early May.

Vegetation

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312 Of the 6,404 rai privately owned in Bangchan 6,106 rai is devoted to rice and 298 rai to homelots. During the rice season the village is seen as a vast rice field interspersed with bamboos and fruit trees on the homelots which string along the half dozen canals of the village. In the dry season only stumps of rice stalks are left in the field.

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231 Some of these may be removed by burning. With the coming of rains, which usually fall once or twice in March and four or five times in April, a variety of grasses begin to appear and the rice field is gradually transformed into a grass field, providing a pasture for the buffaloes until the next planting season when the size of the grass field available

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137 to the buffaloes will be gradually reduced by the process
231 of land preparation.

The homelot is usually surrounded on all sides,
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245 except the one facing the canal, with bamboos which serve
351 to protect the farm home from strong wind. Within this compound there always is a kitchen garden where a variety of plants and vegetables for everyday use are grown. If the homelot is large, there may be enough room at the backyard for an orchard where fruit trees may be grown. In some cases, aquatic plants are cultivated in the canal in front of the house.

137 In addition to cultivated plants, there are to be seen also wild shrubs and vines which are more or less restricted to small strips of land along the banks of the canals. Wild aquatic vegetables, especially the morning glory, are always seen in these canals, making them appear narrower than they actually are.

Livestock

231 Buffaloes: As in most of the rice producing areas of the country, so in Bangchan buffaloes are used in all kinds of farm work where the help of draft animals is needed. Since the village is without land which can be grazed the year-round, buffaloes are not locally bred but are brought in from the northeast and other parts of the kingdom. To be sure, there are some local-born buffaloes, and these are considered to be stronger and to live longer than the imported

243 312 water started on June 10, irrigation work before that was limited to repairing the dikes) and ended on July 8.

[192] The rising of the water level in the canal from July onward, slowly at the beginning and progressively more rapidly afterward, until it reaches its ebb in November, is due to local rains as well as rains falling elsewhere which affect the general water level of the entire Central Plain. While farmers are anxious for the arrival of rains at the beginning of the rice season in order that they may get their field work started, by August their worry has shifted to too much water instead of too little. If there is too much water at this later stage when the canal water level is rapidly rising and will soon go well above the height of the dikes, there is a danger that the seedlings in the seedbed and newly transplanted rice plants may be destroyed by the flood. Every Bangchan farmer knows that as from the Buddhist Lent of each year (the full moon of the eighth lunar month -- July 27 for 1953), the fieldwork has entered a new phase when he has to spend longer hours on the field or else it might not be ready for transplanting before the canal water level rises too high to permit transplanting. Even after transplanting has been finished, unless it is done well before the flood so that the transplanted rice plants are well established on the field, the danger still exists.

243 5. Rolling. This is a necessary step following plowing and harrowing. Only if the seedbed is to be used for a second time in the year as an additional parcel after all the